

## **WHAT IS CLAIMED IS:**

1. A cutting apparatus for cutting a specimen comprising: a knife, defining a knife edge, a knife holder for clamping the knife, a specimen holder for holding the specimen, a feed device for generating a relative motion between the knife and the specimen, a light barrier being arranged parallel to the knife edge and located between the knife and the specimen, the arrangement of the light barrier is such that the relative motion between the knife and the specimen penetrates the light barrier and thereby ascertains a spacing between the knife and the specimen.
2. The cutting apparatus as defined in Claim 1, wherein the light barrier is arranged substantially at the height of the knife blade and at a defined spacing between the knife and the specimen.
3. The cutting apparatus as defined in Claim 1, wherein the light barrier is arranged in stationary fashion with respect to the knife or to the specimen.
4. The cutting apparatus as defined in Claim 1, wherein the light barrier comprises a transmitter of electromagnetic radiation, in particular a laser or an LED, and a receiver of electromagnetic radiation.
5. The cutting apparatus as defined in Claim 1, wherein the transmitter and the receiver are mechanically coupled to the knife holder or to the specimen holder.
6. The cutting apparatus as defined in Claim 5, wherein the transmitter and the receiver are mounted in stationary fashion, in particular each in stationary fashion, in a housing wall of the cutting apparatus.
7. The cutting apparatus as defined in Claim 1, wherein an alternating drive system for moving the specimen at different speeds is further provided in the cutting apparatus.
8. The cutting apparatus as defined in Claim 7, wherein a coding device is provided on the alternating drive system in such a way that an automatic setting of a cutting window can

be generated by way of the interruption of the light barrier during an up-and-down motion of the specimen.

9. A microtome or ultramicrotome comprising: a knife, defining a knife edge, a knife holder for clamping the knife, a specimen holder for holding a specimen, a feed device for generating a relative motion between the knife and the specimen, a light barrier being arranged parallel to the knife edge and located between the knife and the specimen, the arrangement of the light barrier is such that the relative motion between the knife and the specimen penetrates the light barrier and thereby ascertains a spacing between the knife and the specimen.
10. A method for bringing a specimen close to a knife of a microtome or ultramicrotome, comprising the steps of:
  - securing the specimen in a specimen holder and the knife in a knife holder (24);
  - moving the specimen and the knife toward one another with the aid of a feed device;
  - providing a light barrier between the knife and the specimen, wherein the light barrier being arranged parallel to a knife edge of the knife;
  - interrupting the motion of the specimen and the knife toward one another at a defined; and
  - ascertaining a defined spacing between the knife and the specimen upon the interruption of the light barrier.
11. The method as defined in Claim 10, wherein the feed of the feed device is deactivated as a result of detection of the interruption of the light barrier.
12. The method as defined in Claim 11, wherein after the interruption of the light barrier, the spacing between the knife and the specimen is decreased by a predetermined amount.

13. The method as defined in Claim 12, wherein after the interruption of the light barrier, the feed device is automatically switched over to a feed that corresponds to a predefined cut thickness or speed.
14. The method as defined in Claim 12, wherein after the interruption of the light barrier, the feed device is automatically switched over to a feed that corresponds to a predefined cut thickness and speed.
15. The method as defined in Claim 13, wherein a cutting window is automatically set using an alternating drive system, an interruption of the light barrier during an up-and-down motion of the specimen being used to code a coding device on the alternating drive system.